Fig. 1

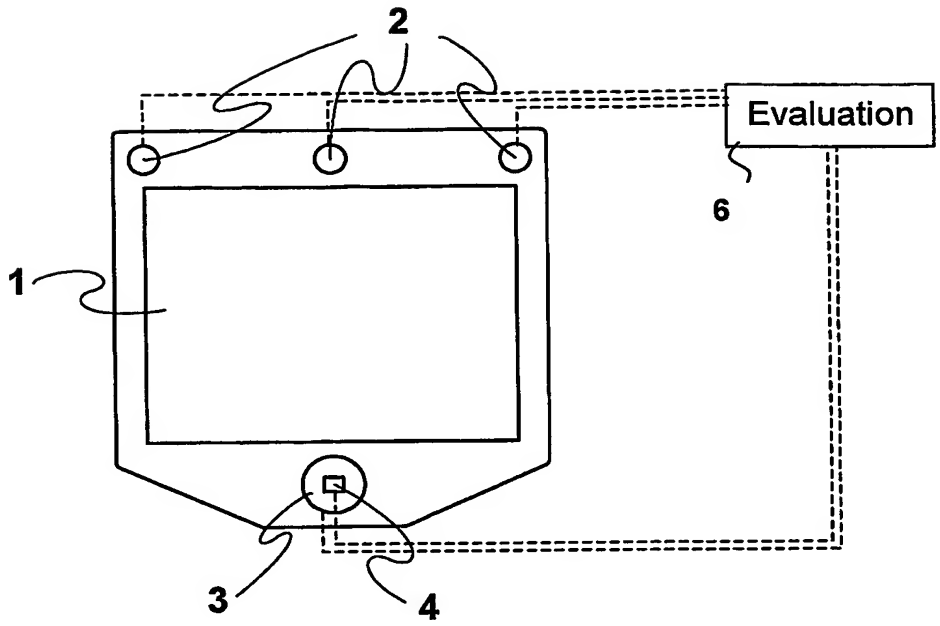
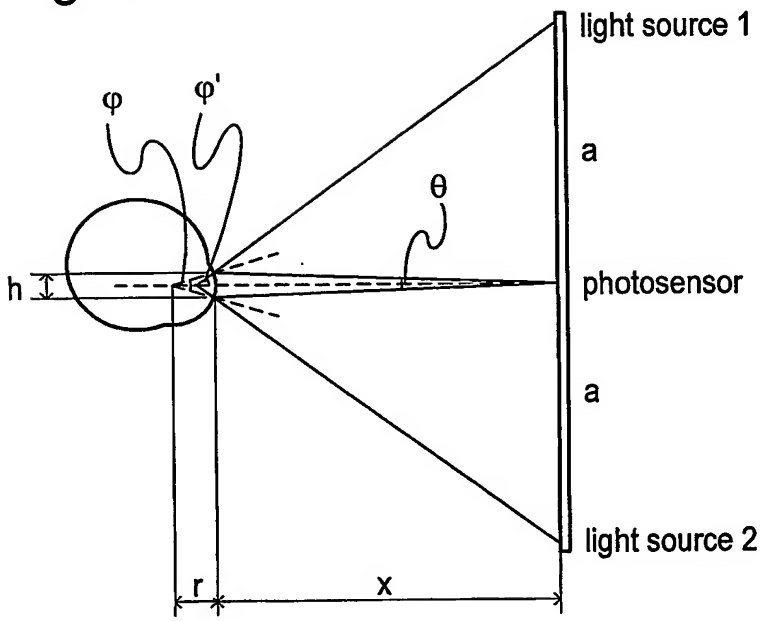


Fig. 2



Let d be the distance between the reflections of the two light sources in the two-dimensional picture captured by the photosensor

$d \sim \theta$

$h \approx x\theta$

$h = 2r \sin(\frac{\varphi}{2})$

$\varphi = \varphi' - \frac{\theta}{2} \approx \varphi'$

$\varphi' \approx \arctan(\frac{a}{x})$

$d \sim \frac{r}{x} \sin[\frac{1}{2} \arctan(\frac{a}{x})]$

Fig. 3a

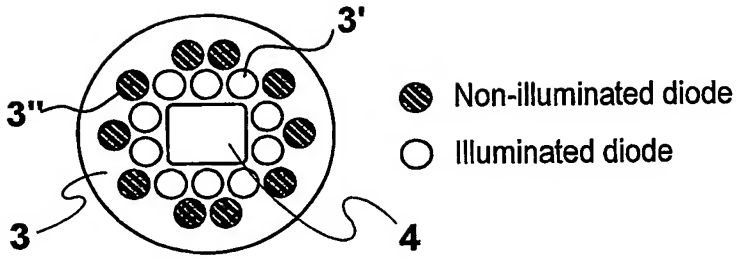


Fig. 3b

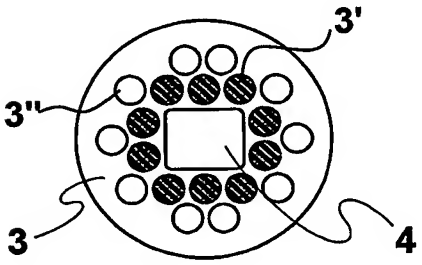
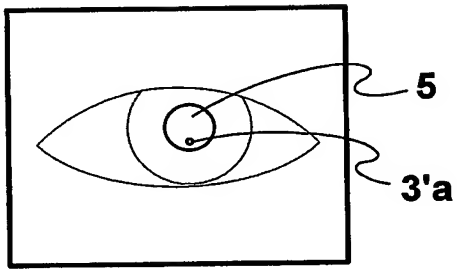


Fig. 4a

Image of an eye when the illumination is in light setting position (i)

Fig. 4b

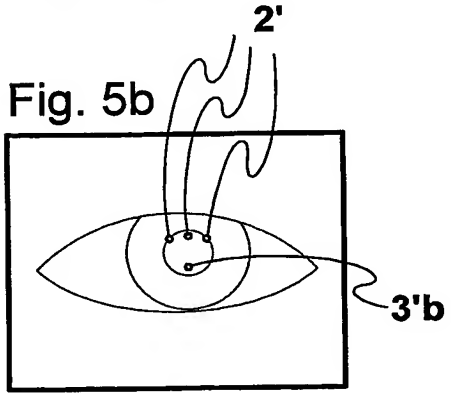


Boundary lines obtained from image of Fig. 4a

Fig. 5a

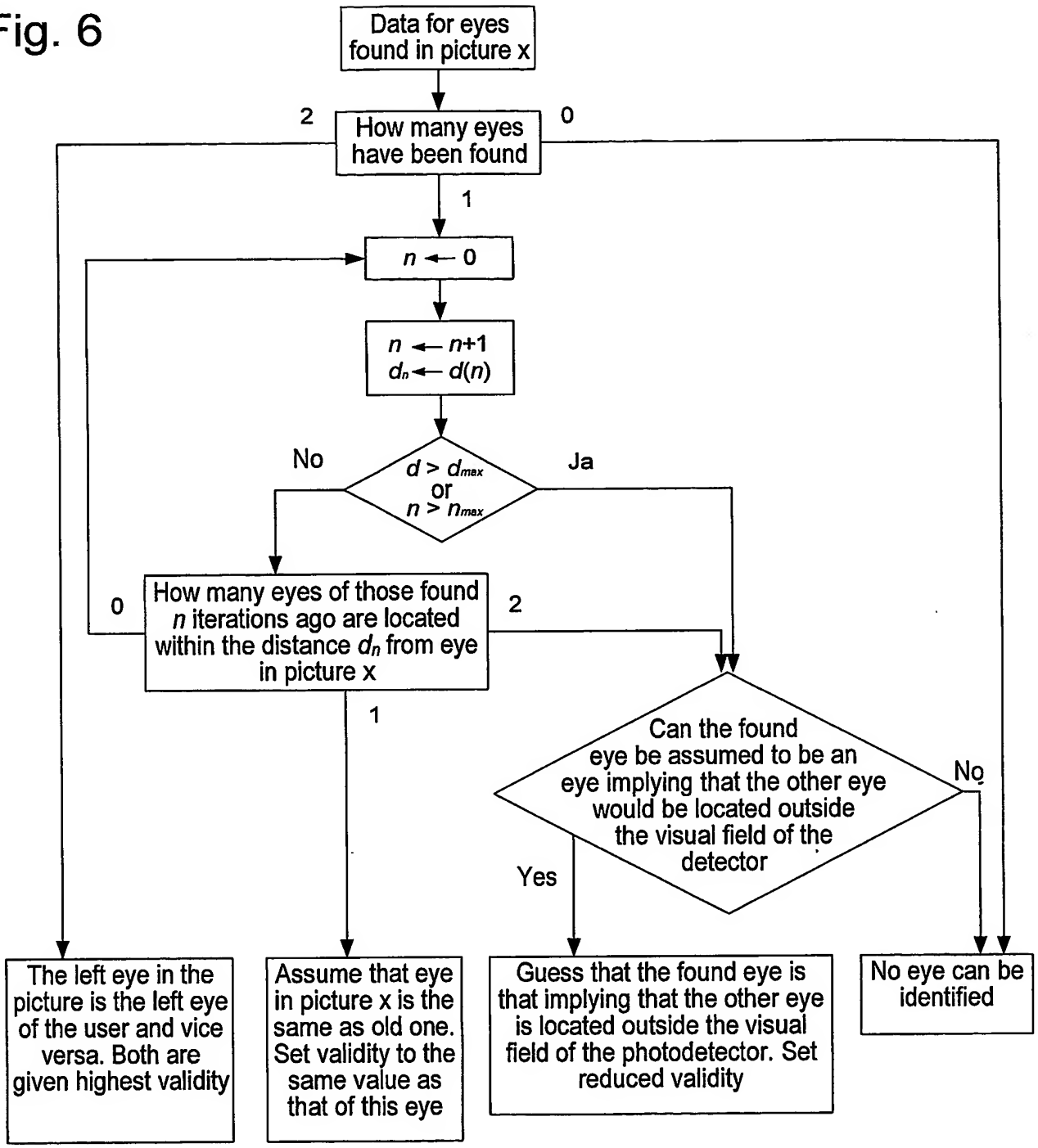
Image of an eye when the illumination is in light setting position (ii)

Fig. 5b



Boundary lines obtained from image of Fig. 5a

Fig. 6

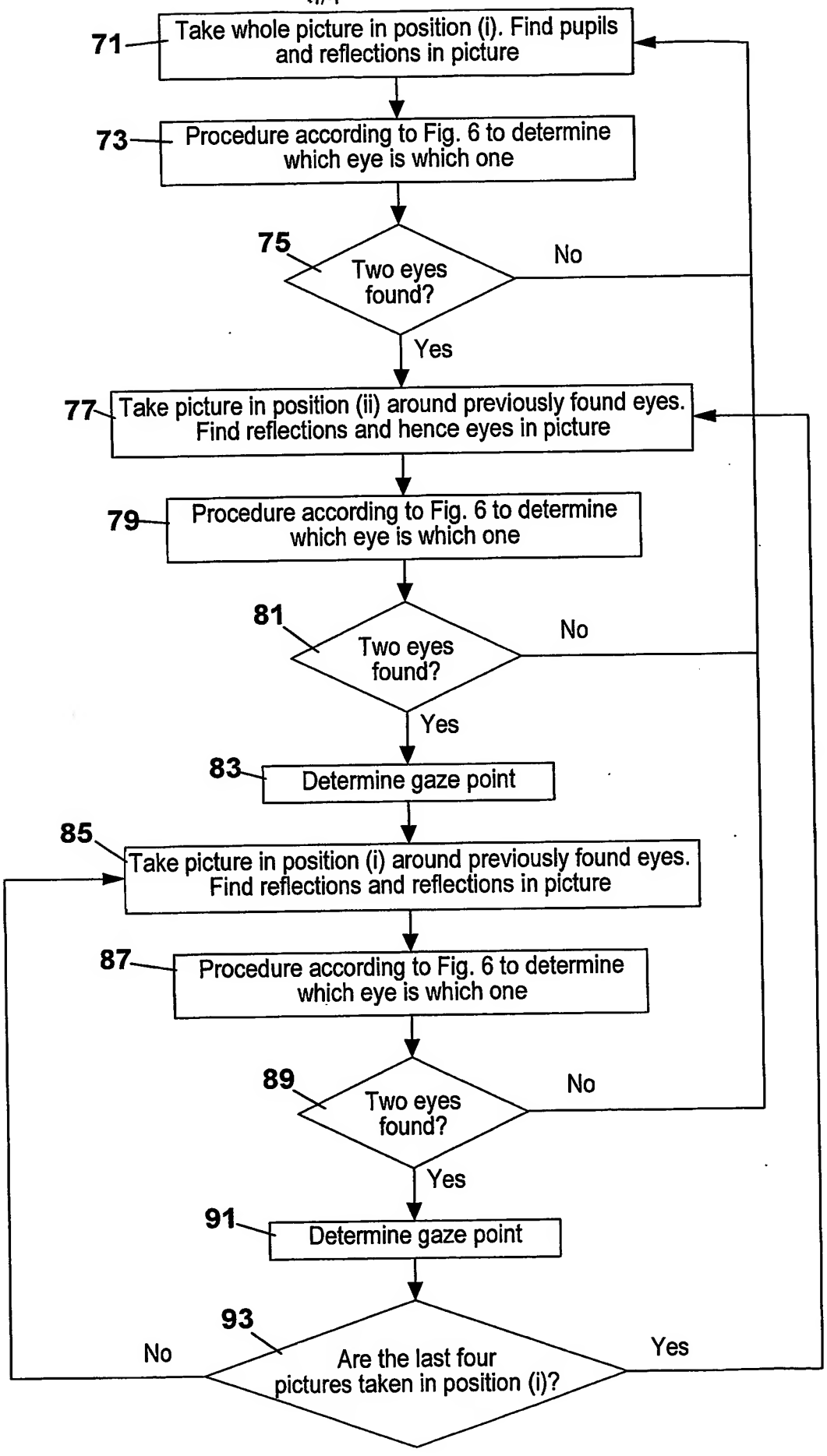


$d(n)$= maximum allowable distance for n iterations according to velocity limit for movement of eye [pixels]

d_{max} = maximum possible distance in picture for n iterations [pixels]

n_{max} = largest number of iterations considered

Fig. 7


71
Take whole picture in position (i). Find pupils and reflections in picture
73
Procedure according to Fig. 6 to determine which eye is which one
75
Two eyes found?
No
Yes
77
Take picture in position (ii) around previously found eyes. Find reflections and hence eyes in picture
79
Procedure according to Fig. 6 to determine which eye is which one
81
Two eyes found?
No
Yes
83
Determine gaze point
85
Take picture in position (i) around previously found eyes. Find reflections and reflections in picture
87
Procedure according to Fig. 6 to determine which eye is which one
89
Two eyes found?
No
Yes
91
Determine gaze point
93
Are the last four pictures taken in position (i)?
No
Yes